

# HYPODERMATIC INJECTIONS OF THE DOUBLE HYDROCHLORATE OF QUININE AND UREA IN THE TREATMENT OF MALARIAL FEVERS.

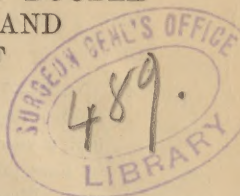
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In *The Polyclinic* for Feb. 15, 1884, and in the same journal for Jan. 15, 1886, I recorded some observations showing the preëminent value in the treatment of malarial fevers of the double hydrochlorate of quinine and urea—*quininum bimuriaticum carbamidatum* of the German-Latin nomenclature, a salt not yet official in the U. S. Pharmacœpia, but which certainly deserves to be added by the Committee on Revision.

Subsequent experience has abundantly confirmed the opinion then expressed concerning this drug. The advantages it possesses are promptitude, certitude, and cheapness. The latter is not nearly so marked now that the tariff has been removed from quinine, but it is still an element to be considered. A single injection of 15 grains of the double hydrochlorate of quinine and urea will, as a rule, accomplish as much as the administration *per os* of 25 to 30 grains of quinine sulphate daily for seven days.

This is strikingly shown by the history of a small group of cases recently studied at the Philadelphia Hospital, in my own wards, and by the courtesy of my colleagues, in the wards of Drs. Musser and Walker. As these cases, together with some important observations we were able to make concerning the influence of the drug upon the hemat-ozoa of malaria, will later be published in detail by the efficient and painstaking resident physician, Dr. Claribel Cone, of Baltimore, under whose direct care the treatment was carried out, I will in the present note give but a brief synopsis of their principal features.





The cases (five in number) were all in males—all had been exposed to the climate of malarial regions—and in every case the characteristic organisms were found in the blood in decided numbers.

The duration of symptoms was reported as four months in one case, one month in another case, and in the other cases from a few days to two weeks. The patients were kept without specific treatment for varying intervals, in order to establish beyond question the diagnosis and the type of fever. The paroxysms were typical, in two cases tertian, in the others quotidian. In the cases of long duration sallowness of complexion, enlargement of liver and of spleen, anemia and feebleness were present.

In each of four cases a single injection of fifteen grains was sufficient to cause cessation of paroxysms for twelve days. No difference between quotidian and tertian cases was observed in this respect. In the case of four months' duration, on the day following the injection there was a chill at the usual hour, but with lessened fever; a second injection was given, and there was no further return of the paroxysm. The concomitant amelioration of symptoms was remarkable. In one case while the 12-day period of freedom was terminated by a chill on the 13th day, a second injection was not given, and a similar period of freedom again followed.

Observations as to the relation of the organisms to chill periods and freedom periods were made by Dr. Cone, but must await publication until further researches are completed; the object of this note being simply to recall attention to the extremely great utility of a strangely neglected drug.<sup>1</sup>

In private practice, in urgent cases, and in any case where therapeutic studies are not a prime object, the following is the best method of using the remedy.

<sup>1</sup>If some "pushing pharmacist" would only mix it with an inert disguising substance, label it "Antimalaria," advertise it as a "Combination of organic derivatives," distribute "samples" and "chromos," and charge for it ten or twenty times its value, medical men would probably buy it and the editors of certain journals grow enthusiastic over its merits and the liberality of its "enterprising proprietors."



So soon as the diagnosis is established, and without reference to the time of paroxysm, a single injection of from 10 to 15 grains of the salt, dissolved in a syringe-ful (20 to 30 minims) of boiled water, is given. Should a paroxysm recur at the following period, a second injection is given; and should further paroxysms be observed, injections are given in corresponding number; otherwise but three injections are given during the first seven days, and two injections during the second seven days.

After the second week Fowler's solution of potassium arsenite (about five drops t. d.) or arsenic iodide (about 1-24th to 1-12th of grain) is given for two or three weeks. The injections of the second week and the course of arsenic following are rather precautionary measures, based upon the general clinical history of malarial cases, than treatment necessitated by symptoms in the given case. With further observations, one might be willing to limit the injections to one in a week, or even one in twelve days. For the present the plan outlined is deemed safer.

Certain precautions are necessary in the method of giving the injection, which may be repeated from my former communications.

The needle must be inserted deeply; the syringe must be completely emptied before withdrawal, in order that no drop of the solution shall fall on the skin; and the point of puncture must be painted with the tincture of iodine. In the neglect of these precautions, dermatitis, cellulitis or sloughing of the skin may occur. I have not seen abscess; nor have I seen any untoward result whatever when care has been taken.

In one case the diagnostic value of the injection was tested. The patient had quotidian intermittent fever without chill. Malarial organisms were not found in the blood. No result was obtained upon injection of quinine and urea hydrochlorate. More searching inquiry elicited the fact of syphilitic infection not many months previously. Mercurial inunctions were instituted and the fever disappeared.

*The Philadelphia Polyclinic, March 15, 1893.*